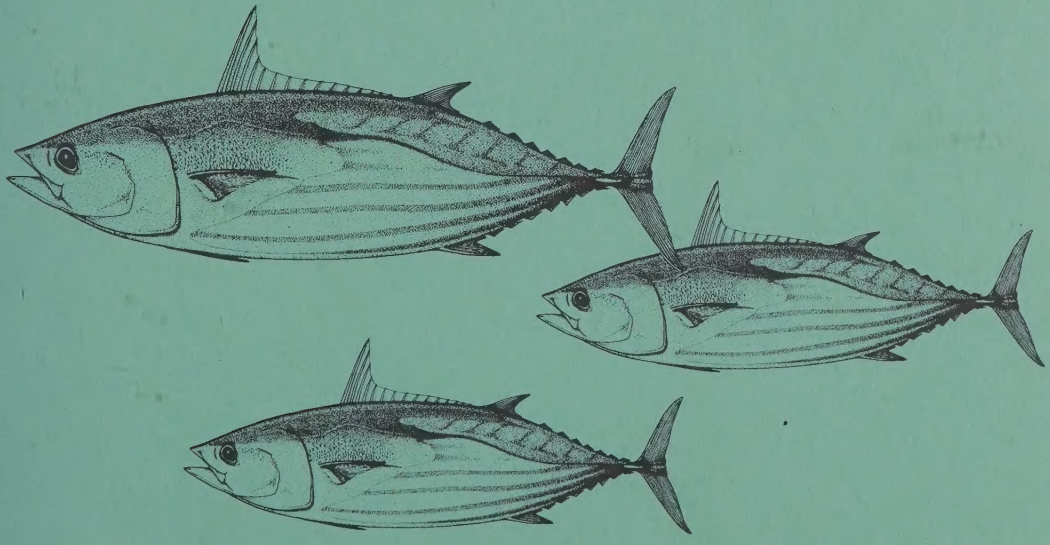
JANUARY 1975
No. 1

FISHING INFORMATION

Southwest Fisheries Center-La Jolla, California



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U.S. DEPARTMENT OF COMMERCE
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JANUARY 1975 , No. 1

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PREFACE

This publication, Fishing Information, appears monthly and contains 1) fishery advisory information, 2) a narrative description of pertinent surface temperature conditions, 3) a narrative description of subsurface temperature structure for parts of the North Pacific, 4) charts of winds and pressures for the eastern North Pacific, 5) charts of sea surface temperature for the North Pacific and eastern tropical Pacific, and 6) charts of subsurface temperature structure in the eastern North Pacific.

A supplement to Fishing Information appears at 15-day intervals throughout the year. This is a chart of sea surface temperature (contoured at 2°F (1°C) intervals) from Baja California to Vancouver Island out to about 135°W. Special bulletins are published in conjunction with the 15-day sea surface temperature charts which include short-term projections of albacore distribution and locations of productive fishing areas, information on oceanographic and atmospheric conditions, and other information as is appropriate during the albacore fishing season.

L.E. Eber, Leader
Fishery Information Systems
Southwest Fisheries Center
La Jolla, California

The Secretary of Commerce has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this publication approved by the Office of Management and Budget, August 20, 1973; this approval expires June 1976.

Submitted for publication - February 19, 1975

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L. Eber (Figures 4 and 6)
F. Miller (Figures 8 and 9)
J. Renner (Figures 1,2,3,5,7 and 10 and 15-day Supplement)

TECHNICAL EDITOR:
K. Raymond
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R. Allen

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Pacific Environmental Institute, Fisheries Research Board of Canada, West Vancouver, British Columbia, by L.F. Giovando from observations by S.G. Westhaver at Langara Island Light; D.L. Kupillas at Cape St. James Light; L. Collins at Kains Island Lightstation; J.G. McNeil at Amphitrite Point Light.
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Expendable bathythermograph and salinity observations are made by the mates and engineers of the Monterey of Pacific Far East Line. The data are processed under supervision of D.R. McLain at the NMFS Pacific Environmental Group, Monterey, using computer facilities of the Fleet Numerical Weather Center. The project is partially supported by the National Science Foundation and the Office of Naval Research under Government NAonr-9-74.

Sea Surface Temperature and Environmental Conditions

L. EBER AND F. MILLER

Eastern North Pacific

The pattern of anomalous sea surface temperatures that had persisted in the eastern North Pacific throughout the later months of 1974 was still discernible in January 1975, although some alteration has occurred. This pattern is characterized by below-normal surface temperatures in the central portion, roughly 30° to 45°N, west of 145°W, while waters in adjacent regions to the north, east and south were warmer than normal. Below-normal temperatures also prevailed in the Gulf of Alaska, in coastal areas off southern Oregon, California and Baja California and in the region extending out to Hawaii, south of about 25°N. This month, negative deviations spread into other coastal areas also, extending along the entire North American west coast out to about 130°W (Figure 5). In the mid-latitude region west of 145°W, however, negative deviations became weaker while positive deviations south of 35°N increased in magnitude and extent.

Atmospheric pressures were high in January, in most of the region south of 45°N and east of 165°W. The largest positive deviations from normal occurred in the vicinity of 40°N, from 140° to 165°W and exceeded 8 millibars (Figures 1 and 2). Pressures over the Alaska Peninsula were below normal by more than 4 millibars, resulting in a moderately strong southeast to northwest gradient. These conditions were associated with resultant winds having stronger-than-normal northward components west of 140°W and above-normal southward components east of 140°W, which may have contributed to the observed changes in the anomalous sea surface temperature pattern.

Western North Pacific

The central zone belt of below-normal sea surface temperatures between 30° and 50°N in the western North Pacific was also diminished somewhat in January 1975 compared with preceding months. Deviations in the zone 45° to 50°N changed from negative to positive and a cell of positive deviations of more than 2°F (1.1°C) appeared in the vicinity of 37°N, 151° to 158°E, while negative deviations elsewhere decreased (Figure 6). South of latitude 30°N, sea surface temperatures continued to be warmer than normal in most areas, except in the vicinity of 150°E.

Correction: The November 1974 issue of Fishing Information contains an error in Figure 6 - Deviation of sea surface temperature from the 20-year mean (Western North Pacific). Hatching (indicating cooler than normal temperatures) should have been carried through all of the area bounded by the 2°F deviation line drawn east of longitude 175°E, between 38° and 44°N. Both the 2° line and the enclosed 4° line represent negative deviations.

Eastern Tropical Pacific

Seasonal changes in sea surface temperature from December to January are similar to those from November to December. Warming in the Peru Current and westward along the equator to 120°W continues at the rate of 2° to 4°F (1.1° to 2.2°C) per month. In the tropical region of the northern hemisphere cooling takes place at rates not exceeding 2°F (1.1°C) per month, except along the coast of Baja California, east of 115°W, southward to 15°N. The equatorial ocean front from Ecuador west to 140°W is much weaker in January than in December, except near the Galapagos Islands where north-south temperature gradients remain fairly strong.

The most significant aspect of the January 1975 sea surface temperature pattern (Figure 8) is that the temperatures in most areas were close to the long-term means. The surface waters, although normal, are warmer over most of the tropics south of 15°N than in January 1974 when a large part of the equatorial area (5°N to 5°S) and the Peru Current had surface temperatures 2° to 6°F (1.1° to 3.3°C) below normal. For the past several months, there has been a slow warming trend, particularly between 10°N and 10°S. Thus, in January 1975 (Figure 9) there remains only small areas of negative temperature anomalies greater than 2°F (1.1°C).

Over the fishing grounds in the northern hemisphere some cooling took place within 300 miles of the coast from the Gulf of Tehuantepec to Costa Rica because of frequent outbreaks of strong northerlies and northeasterlies from the Gulf of Mexico and southwest Caribbean Sea spilling overland into the Pacific. In the local fishing banks south and west of Baja, temperatures cooled at the seasonal rate but remained about 2°F (1.1°C) below normal as has been the case for over 6 months.

Subsurface Temperature Structure in the Northeast Pacific Ocean

J. F. T. Saur

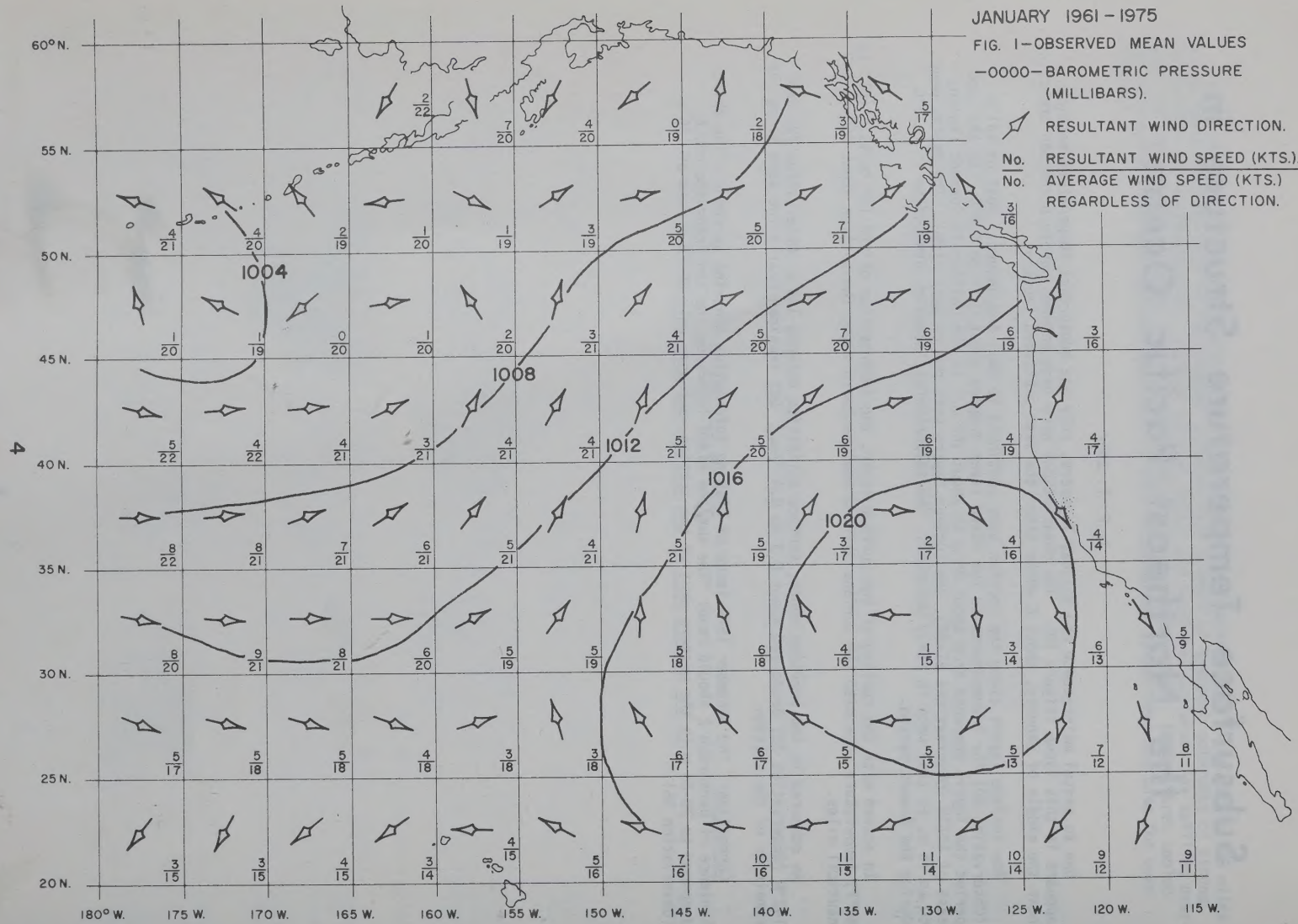
Due to vessel maintenance and holiday layovers, only one subsurface temperature section appears in this issue (Figure 10). The observations were made between Honolulu and San Francisco near the middle of January, about 6 weeks after the last published section.

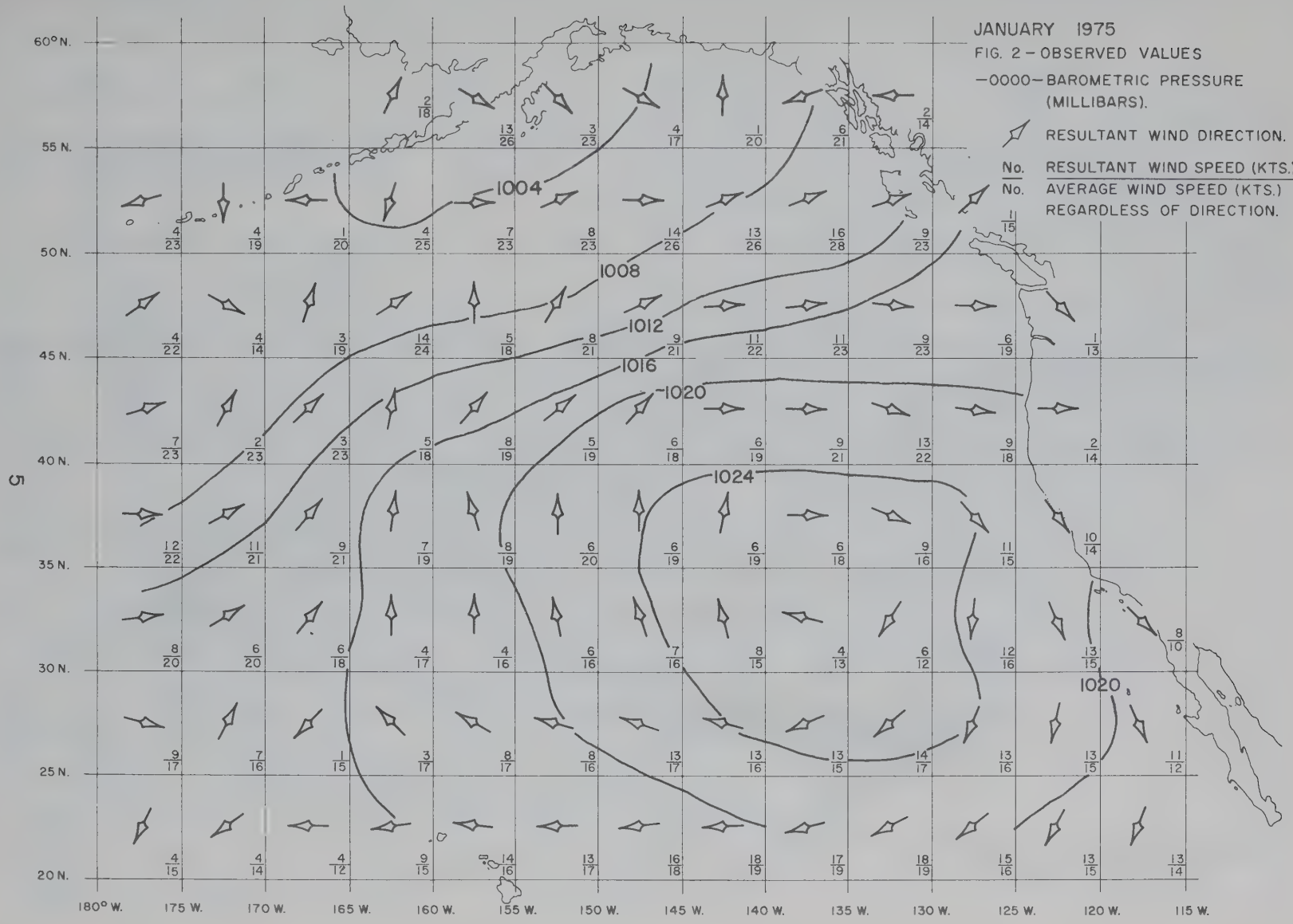
The surface layers along the section have continued to cool and deepen. West of 131°W (Observation 80) the temperatures in the mixed layer dropped about 0.5° to 1.0°C. In the same period the layers deepened from about 80 m to about 100 m. In the California Current region, east of 131°W (Observations 81-84), the surface layers were not as well mixed. The depths were 60 to 75 m, as they were in early December. The temperatures, however, dropped by 1° to 2°C during the 6-week period.

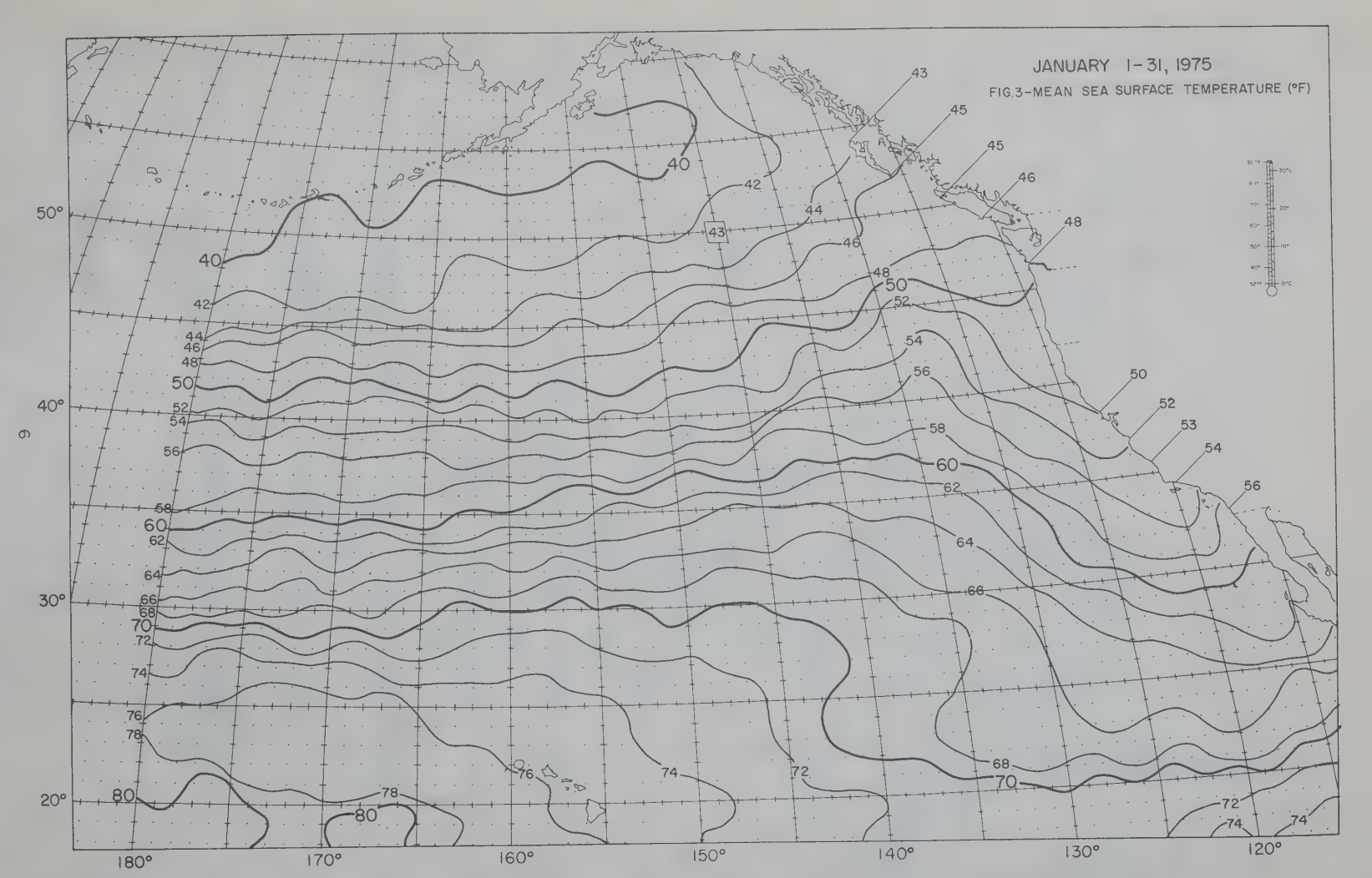
In accord with the cooling of the surface layer, the intersection of the 16° to 19°C (61° to 66°F) temperature zone with the surface shifted southwestward along the section about 150 to 200 nautical miles.

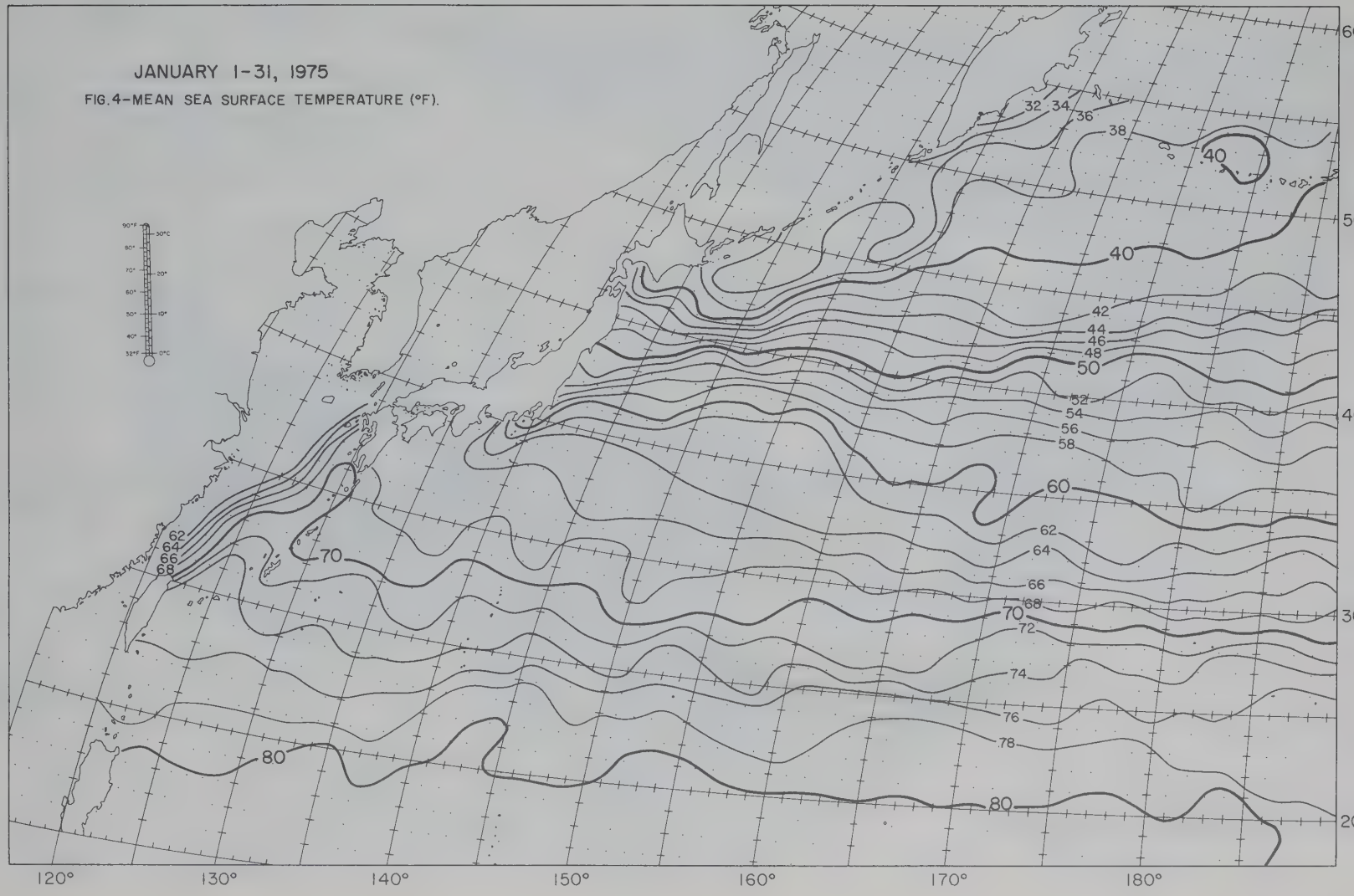
As compared to the previous month, surface salinities between 134°W (Observation 78) and 142°W (Observation 72) decreased about 0.3 to 0.4 $^{o}/_{oo}$, but remained nearly the same along the remainder of the section.

Correction: The December 1974 issue of Fishing Information contains an error. The third sentence of paragraph 2 should read: "The surface mixed layers on the San Francisco route deepened to 70-85 m in the western part of the section, but were only 60-70 m east of 135°W (Observation 36)."


JANUARY 1961 - 1975
FIG. 1 - OBSERVED MEAN VALUES
-0000- BAROMETRIC PRESSURE (MILLIBARS).
RESULTANT WIND DIRECTION.
No. RESULTANT WIND SPEED (KTS.).
No. AVERAGE WIND SPEED (KTS.) REGARDLESS OF DIRECTION.
1004
1008
1012
1016
1020
60° N.
55 N.
50 N.
45 N.
40 N.
35 N.
30 N.
25 N.
20 N.
180° W.
175 W.
170 W.
165 W.
160 W.
155 W.
150 W.
145 W.
140 W.
135 W.
130 W.
125 W.
120 W.
115 W.


JANUARY 1975
FIG. 2 – OBSERVED VALUES
–0000– BAROMETRIC PRESSURE (MILLIBARS).
RESULTANT WIND DIRECTION.
No. RESULTANT WIND SPEED (KTS.).
No. AVERAGE WIND SPEED (KTS.) REGARDLESS OF DIRECTION.
1004
1008
1012
1016
1020
1024
1020
60° N.
55 N.
50 N.
45 N.
40 N.
35 N.
30 N.
25 N.
20 N.
180° W.
175 W.
170 W.
165 W.
160 W.
155 W.
150 W.
145 W.
140 W.
135 W.
130 W.
125 W.
120 W.
115 W.


JANUARY 1-31, 1975
FIG.3-MEAN SEA SURFACE TEMPERATURE (°F)
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


JANUARY 1-31, 1975
FIG.4-MEAN SEA SURFACE TEMPERATURE (°F).
60°
50°
40°
30°
20°
120°
130°
140°
150°
160°
170°
180°
32
34
36
38
40
40
42
44
46
48
50
52
54
56
58
60
62
64
66
68
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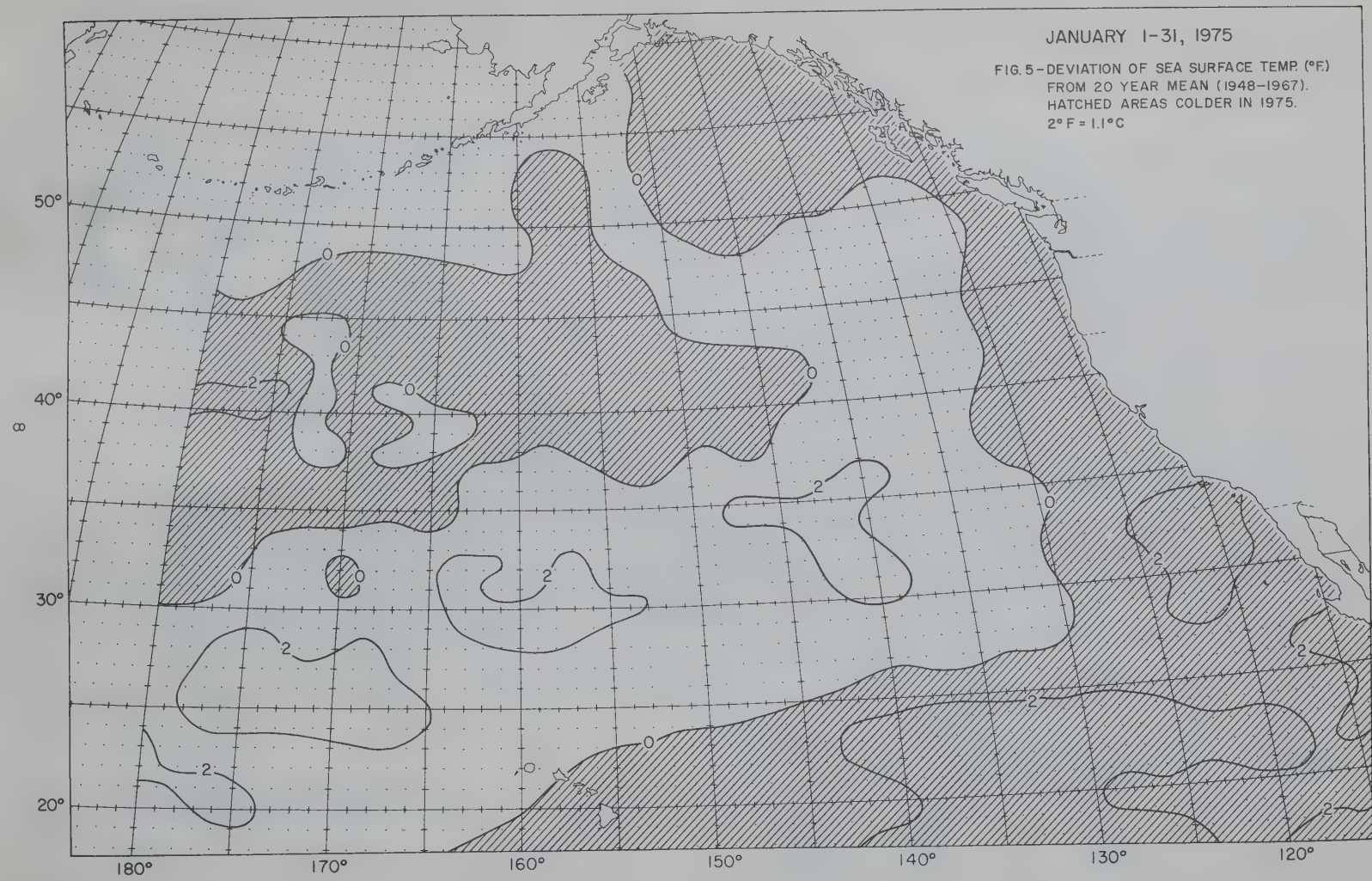
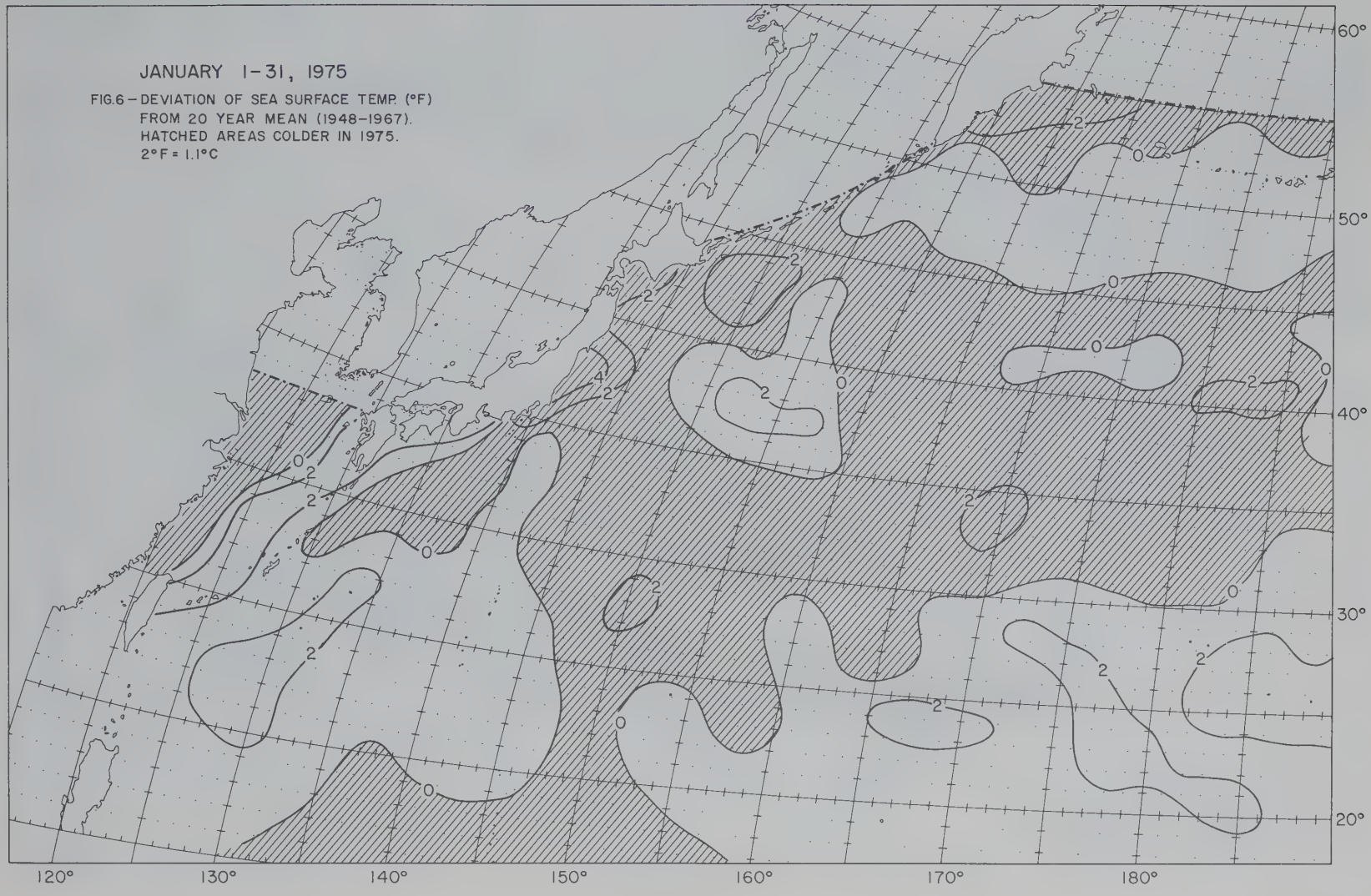
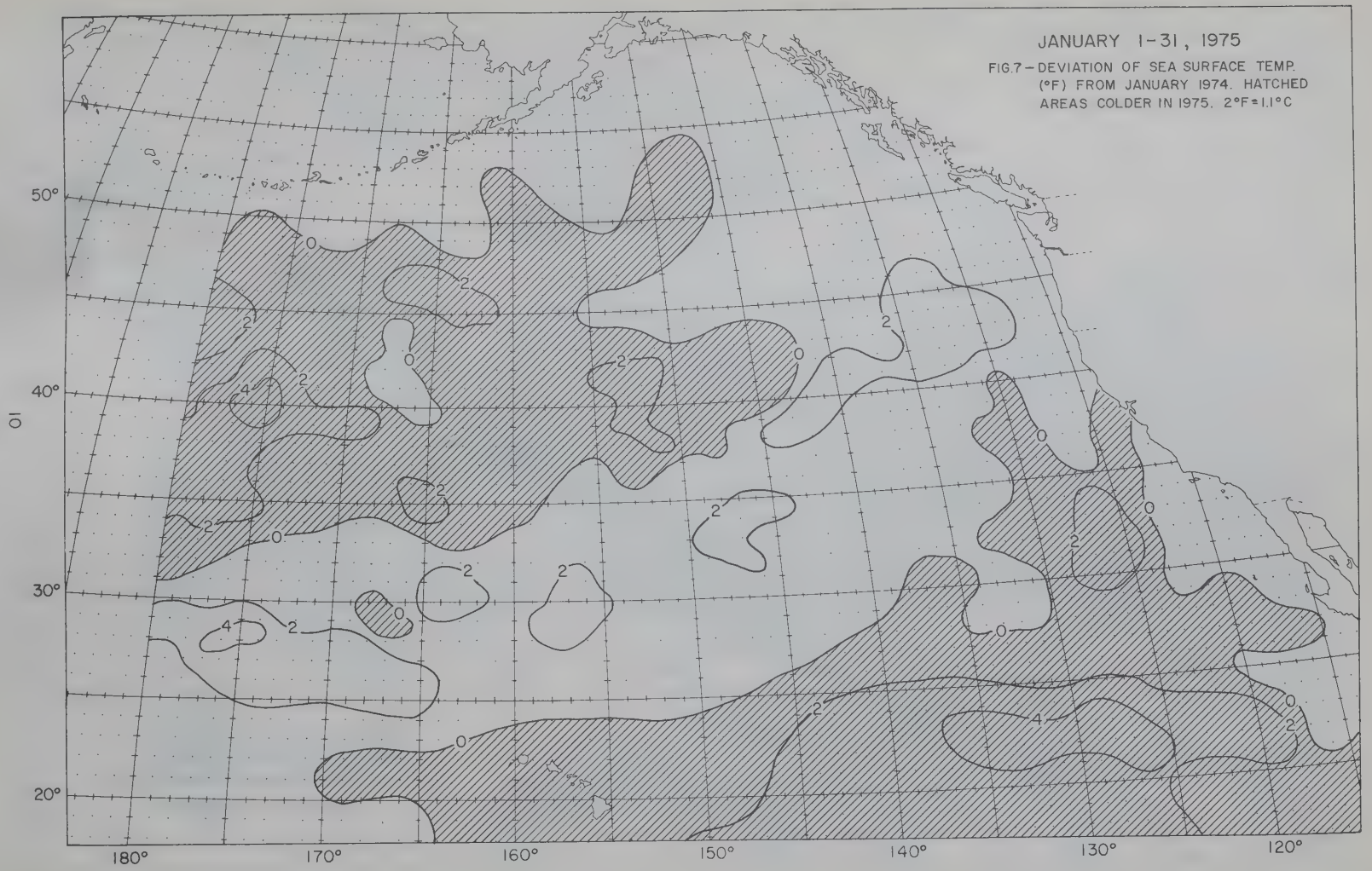
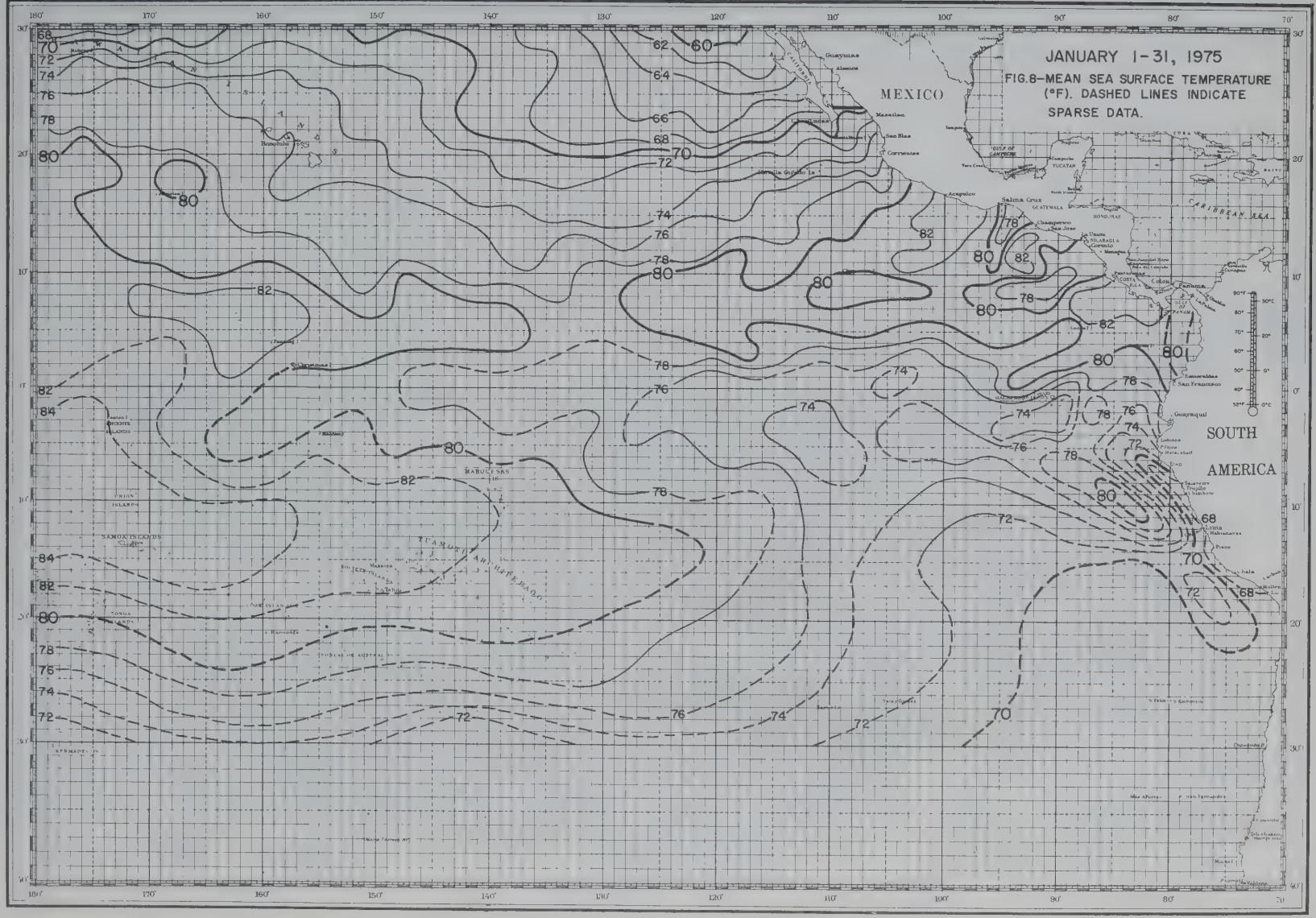
68
70
80


JANUARY 1-31, 1975
FIG. 5 - DEVIATION OF SEA SURFACE TEMP. (°F.) FROM 20 YEAR MEAN (1948-1967). HATCHED AREAS COLDER IN 1975.
2° F = 1.1° C
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°
0
2


JANUARY 1-31, 1975
FIG.6 – DEVIATION OF SEA SURFACE TEMP. (°F) FROM 20 YEAR MEAN (1948–1967). HATCHED AREAS COLDER IN 1975. 2°F = 1.1°C
60°
50°
40°
30°
20°
120°
130°
140°
150°
160°
170°
180°
2
0


JANUARY 1-31, 1975
FIG.7 – DEVIATION OF SEA SURFACE TEMP. (°F) FROM JANUARY 1974. HATCHED AREAS COLDER IN 1975. 2°F = 1.1°C
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°
01


JANUARY 1-31, 1975
FIG.8—MEAN SEA SURFACE TEMPERATURE (°F). DASHED LINES INDICATE SPARSE DATA.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
GULF OF MEXICO
GALAPAGOS ISLANDS
MARQUESAS IS.
SAMOA ISLANDS
TUAMOTU ARCHIPELAGO
Guaymas
Mazatlan
San Blas
Corrientes
Acapulco
Salina Cruz
GUATEMALA
HONDURAS
Champerico
San Jose
Corinto
NICARAGUA
Managua
COSTA RICA
Colon
PANAMA
Panama
Esmeraldas
San Francisco
Guayaquil
Honolulu
Yucatan
Campeche
Veracruz
Tampico
Progreso
Puerto Cortes
Trujillo
Limon
Puerto Limon
Bocas del Toro
Chiriqui
Puerto Armuelles
Puntarenas
Quepos
Golfito
Manzanillo
Salinas
Puna
Tumaco
Buenaventura
Callao
Pisco
Mollendo
Arica
Iquique
Antofagasta
Valparaiso
Juan Fernandez Is.
Easter I.
Pitcairn I.
Tahiti
Raiatea
Rarotonga
Penrhyn I.
Manihiki
Suwarrow
Niue I.
Tonga Islands
Fiji Islands
Samoa Islands
Union Islands
Phoenix Islands
Line Islands
Marquesas Is.
Society Is.
Tuamotu Archipelago
Austral Is.
Pitcairn Is.
Juan Fernandez Is.
Galapagos Islands
Cocos I.
Malpelo I.
Clipperton I.
Revillagigedo Is.
Guadalupe I.
Socorro I.
Cedros I.
Guadalupe I.
Isla Guadalupe
Isla Cedros
Isla Socorro
Isla Clarion
Isla Malpelo
Isla Cocos
Isla Gorgona
Isla Gallo
Isla Malpelo
Isla Clipperton
Isla Revillagigedo

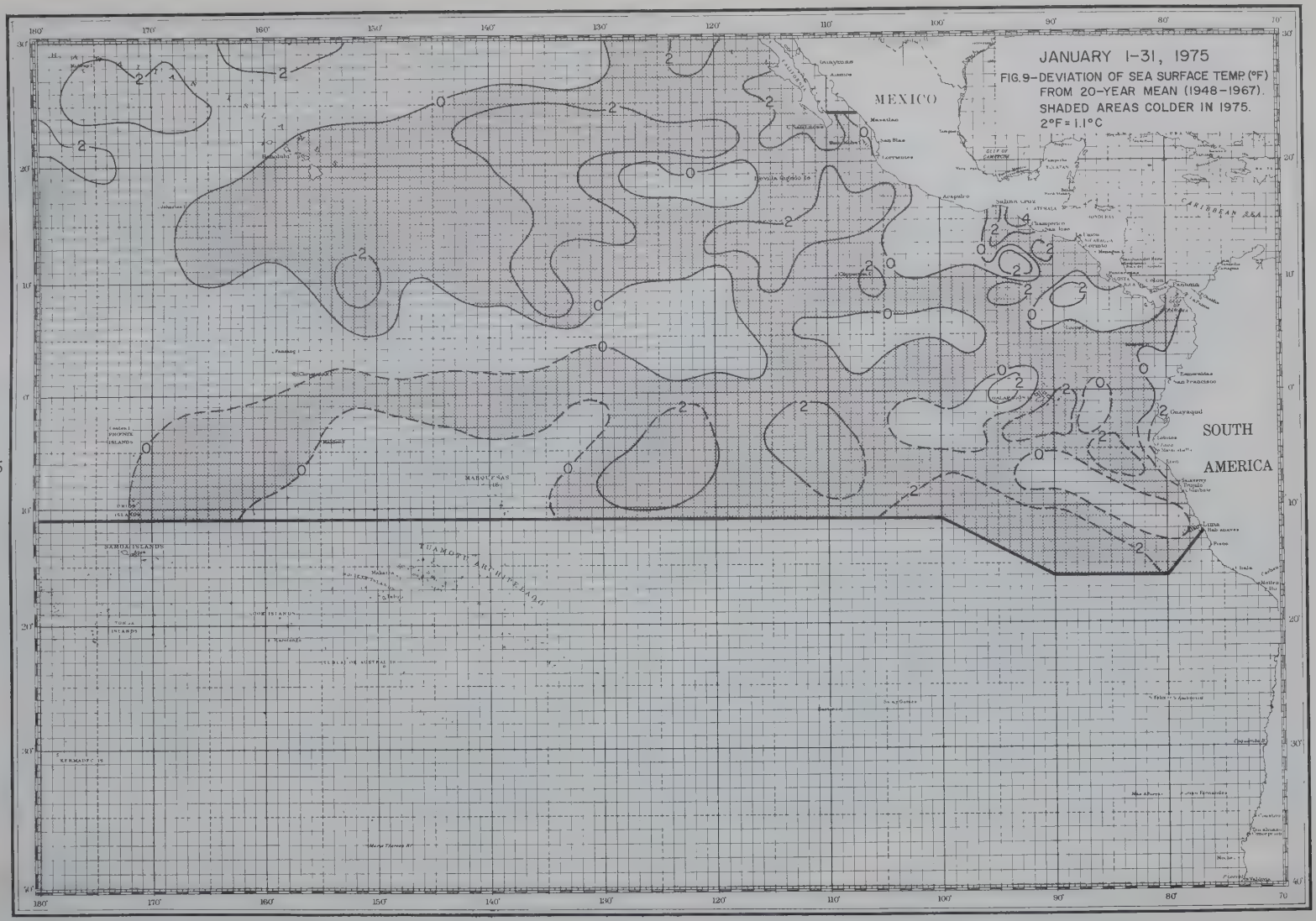
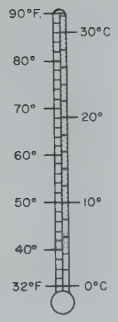

JANUARY 1-31, 1975
FIG.9-DEVIATION OF SEA SURFACE TEMP (°F) FROM 20-YEAR MEAN (1948-1967). SHADED AREAS COLDER IN 1975.
2°F = 1.1°C
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
GULF OF CAMPECHE
PHOENIX ISLANDS
SOLOMON ISLANDS
TUAMOTU ARCHIPELAGO
MARQUESAS
180°
170°
160°
150°
140°
130°
120°
110°
100°
90°
80°
70°
30°
20°
10°
0°
10°
20°
30°
40°

FIGURE 10

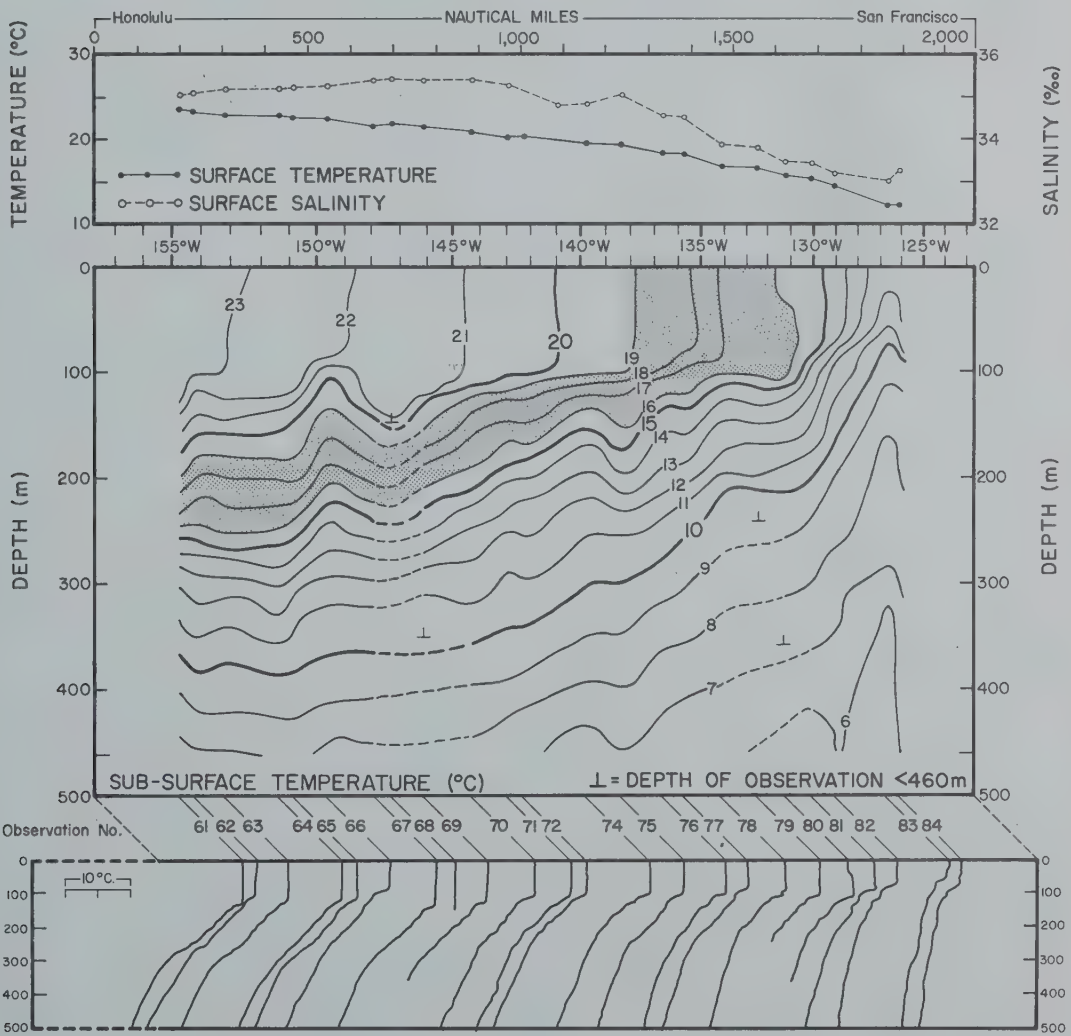


HONOLULU – SAN FRANCISCO

JANUARY 11–15, 1975

MONTEREY

VOYAGE 62



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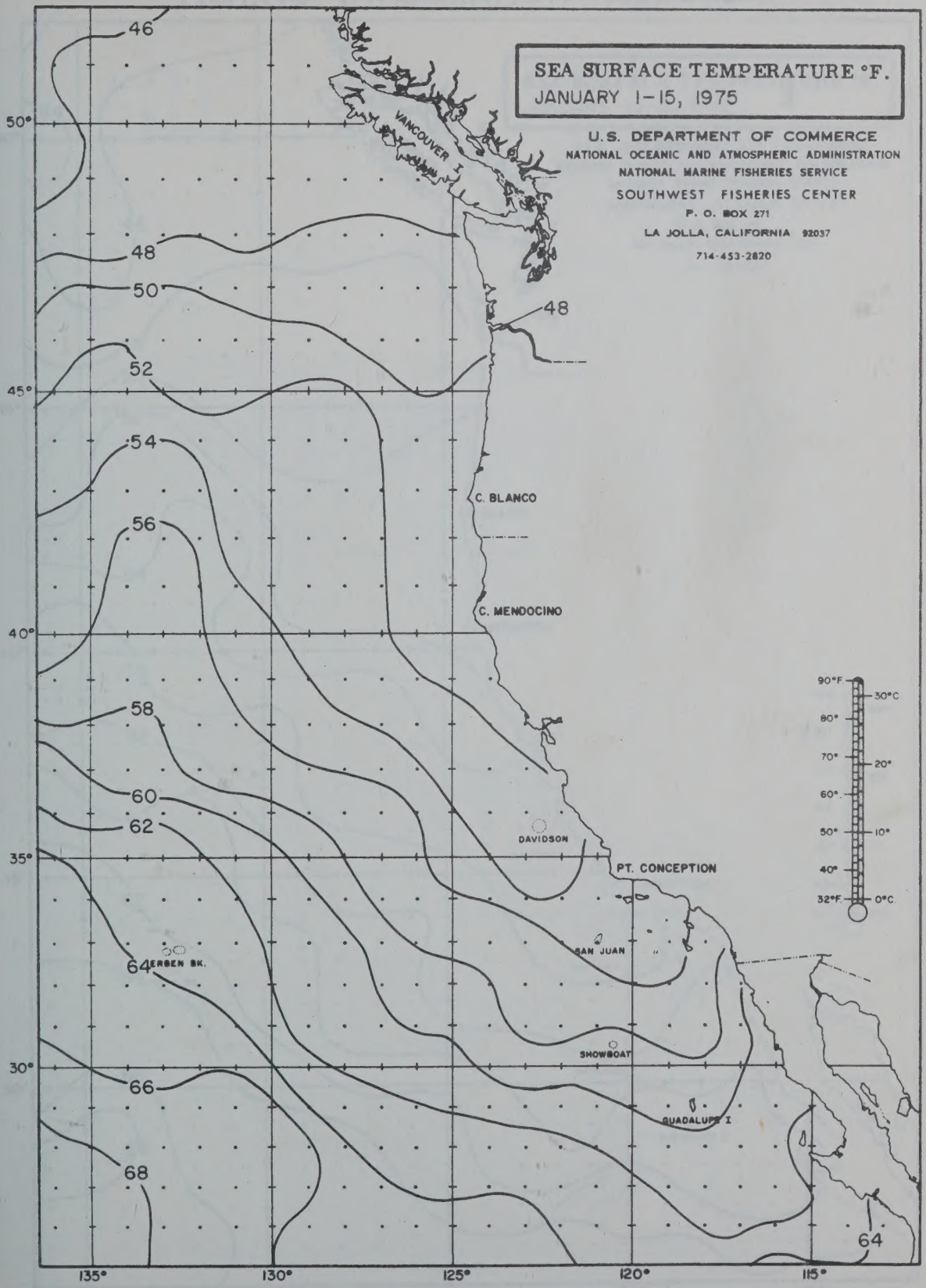

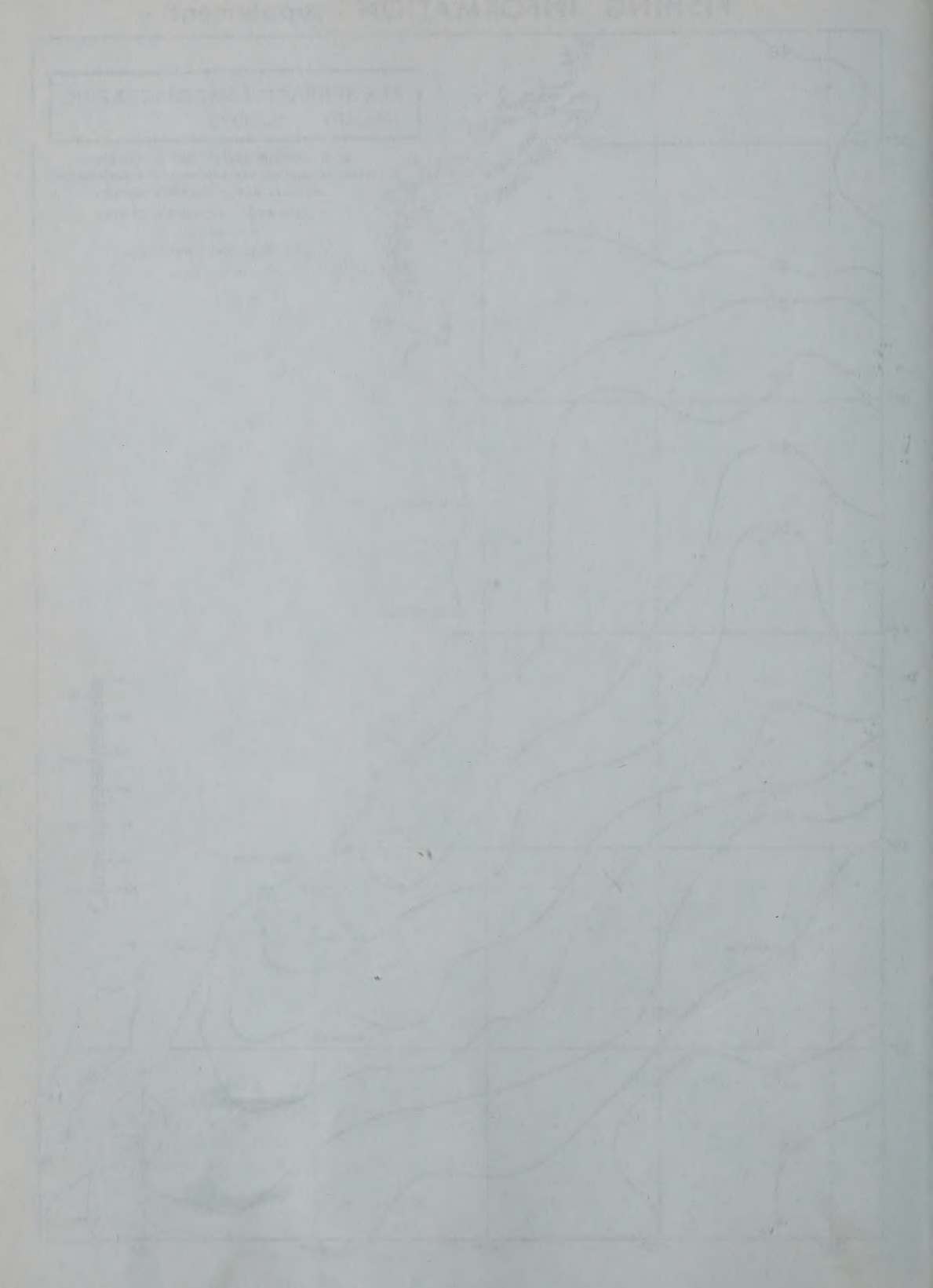

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